

Remarks

The Office Action mailed June 30, 2004 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-16 and 18-25 are now pending in this application. Claims 1-25 stand rejected. Claim 17 has been canceled.

The objection to the drawings under 37 C.F.R. 1.83 (a), is respectfully traversed. Specifically, under 37 C.F.R. 1.83 (a), conventional features disclosed in the description and claims need not be shown in the drawings where their detailed illustration is not essential for a proper understanding of the invention. More specifically, the Federal Circuit has opined in *Verve LLC v. Crane Cams, Inc.*, 65 USPQ 2d 1051, 1053-1054 (Fed. Cir. 2002), that "[p]atent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practitioners, lest every patent be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field." Accordingly, in the present case, Applicants respectfully submit that an artisan of ordinary skill in the art, after reading the specification in light of the Figures, would understand recessed fins extending from an endshield inner surface having an inner portion to an endshield outer surface. Furthermore, with respect to Figure 3, and in accordance with the amended specification, reference character 154 designates endshield inner surface and reference character 156 designates the raised portion of inner surface 154. Moreover, as recited in the specification, at page 5, lines 7-13, the "endshield 102 which includes an inner surface (not shown [in Figure 1]) and an outer surface 130 that has a plurality of recessed fins 132...[t]he inner surface of endshield 102 includes a substantially flat raised portion (not shown [in Figure 1])... recessed fins 132 extend from the substantially flat raised portion [of inner surface of endshield 102]." For the reasons set forth above, Applicants respectfully request the objection to the drawings under 37 C.F.R. 1.83 (a) be withdrawn.

The rejection of Claims 1-3, 10, 12, 16, 17, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Permuy (U.S. Patent No. 6,031,306) and further in view of Harms et al. (U.S. Patent No. 4,668,898) is respectfully traversed.

Permuy describes a motor having an electronic control device 14 that is mounted adjacent to an end plate 4 within a motor casing 2. Control device 14 includes a printed circuit board 16 which carries the electronic components which constitute a circuit for determining and controlling the power supply to the motor. The motor includes a thermal screen 22 that is interposed axially between an armature 8 and electronic control device 14, and having an outer circular frame or hoop portion 24. Thermal screen 22 includes four flat metallic panels 26-29, respectively, that extend from the circular frame 24 inwardly toward a commutator 12. Thermal screen 22 also includes straight cooling fins 32 which project outwardly away from circular frame 24 and into the stream of air generated by a fan rotor 13 such that thermal screen 22 captures heat given off by electronic control device 14 and dissipates that heat via cooling fins 32. Notably, Permuy does not describe an endshield including a plurality of recessed fins extending from an inner portion to an outer surface. Furthermore, Permuy does not describe a control assembly in contact with an inner surface and positioned directly beneath the recessed fins.

Harms et al. describe an electronically commutated motor. More specifically, Harms et al. describe “a flat faced endshield or adapter 73, having a plurality of rabbit extensions 74 thereon is mounted to housing 71 at one opposite end thereof and a thermally conductive enclosure or enclosure means, such as a housing 75 or the like for instance, is arranged in mounting and enclosing association with the flat faced end shield thereby to enclose the housing at the one opposite end thereof.” (Col. 9, lines 46-53) The enclosure includes a plurality of radiating fins 85 on the exterior surface of the enclosure. In contrast to the assertions in the Office Action, a plurality of fins 63 do not extend from an end wall (inner portion) 89 of enclosure 75. Rather, a “support 19... [includes] a plurality of heat radiating fins 63 extending therefrom.” (Col. 9, lines 9-14). Additionally, enclosure 75 and support 19 are distinct and separate components joined by a plurality of standoffs 85. Notably, Harms et al. do not describe an endshield including a plurality of recessed fins extending from an inner

portion to an outer surface. Rather, Harms et al. describe an endshield with external fins and a separate, internal support with internal fins.

Furthermore, Harms et al. describes attaching an enclosure to an endshield, best shown in Figure 6, where the separate enclosure contains the electronics associated with an electronically commutated motor and the enclosure performs the heat sinking function. Harms et al. do not describe a control assembly in contact with an inner surface of an endshield and positioned directly beneath recessed fins. Rather, Harms et al. describe a control assembly positioned outside of an endshield and inside a thermally conductive enclosure.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Permuy nor Harms et al., considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Permuy with Harms et al., because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests combining the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "it would have been obvious to one of ordinary skill in the art to combine the reference of Permuy structure of the motor endshield and with the radiating fins of Harms et al. in order to dissipate more heat" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, and Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield. Since there is no suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejections be withdrawn.

Moreover, if art "teaches away" from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited, as a whole, is not suggestive of the presently claimed invention. Moreover, Applicants respectfully submit that Permuy teaches away from Harms et al. and the present invention, and as such, there is no suggestion or motivation to combine Harms et al. with Permuy. Specifically, Permuy describes a motor having a thermal screen having an outer circular frame or hoop portion and straight cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, and in contrast Harms et al. describe an endshield with external fins and a separate internal support with

internal fins. Accordingly, Applicants respectfully submit that Permuy actually teaches away from Harms et al.

Further, and to the extent understood, neither Permuy nor Harms et al., considered alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claim 1 recites a motor endshield assembly that includes “an endshield comprising an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such that each of said recessed fins extends from said inner portion to said outer surface...a control assembly in contact with said inner surface and positioned directly beneath said recessed fins.”

Neither Permuy nor Harms et al., considered alone or in combination, describe or suggest a motor endshield assembly that includes an endshield including an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface and a control assembly in contact with the inner surface and positioned directly beneath the recessed fins. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, and Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Permuy in view of Harms.

Claims 2, 3, 10, and 12 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 2, 3, 10, and 12 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2, 3, 10, and 12 likewise are patentable over Permuy in view of Harms et al.

Claim 16 recites a motor endshield for an electronically commutated motor, the endshield includes “a shaft opening configured to receive a motor shaft...an internal surface comprising a substantially flat raised portion...an external surface comprising a raised cylindrical portion surrounding said opening and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such that each of said recessed fins extends from said substantially flat raised portion to said external surface.”

Neither Permuy nor Harms et al., considered alone or in combination, describe or suggest a motor endshield for an electronically commutated motor that includes an endshield including a shaft opening configured to receive a motor shaft, an internal surface including a substantially flat raised portion, and an external surface that includes a plurality of recessed fins extending radially outward from a shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from said substantially flat raised portion to said external surface. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, and Harms et al. describe an endshield with external fins and a separate internal support with internal fins. Accordingly, Claim 16 is submitted to be patentable over Permuy in view of Harms et al.

Claim 17 depends from independent Claim 16. When the recitations of Claim 17 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claim 17 likewise is patentable over Permuy in view of Harms et al.

Claim 21 recites a method of assembling a motor endshield assembly for an electronically commutated motor, the motor endshield assembly including a control assembly, a power assembly, and an endshield with an inner surface having an inner portion, an outer surface, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface, said method comprising the steps of positioning the control assembly in contact with

the inner surface of the endshield and directly beneath the recessed fins...connecting the power assembly to the control assembly.”

Neither Permuy nor Harms et al., considered alone or in combination, describe or suggest a method of assembling a motor endshield assembly for an electronically commutated motor, wherein the motor endshield assembly includes a control assembly, a power assembly, and an endshield with an inner surface having an inner portion, an outer surface, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface, and wherein the method includes positioning the control assembly in contact with the inner surface of the endshield and directly beneath the recessed fins and connecting the power assembly to the control assembly. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, and Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield. For at least the reasons set forth above, Claim 21 is submitted to be patentable over Permuy in view of Harms et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-3, 10, 12, 16, 17, and 21 be withdrawn.

The rejection of Claims 11 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Permuy and Harms et al. as applied to Claims 1 and 16 above and in further view of Search (U.S. Patent No. 972,929) is respectfully traversed.

Permuy and Harms et al. are described above. Search describes a dynamo-electric machine including a housing 10 having an end cover 12. End cover 12 includes a man hole 34 which enables the interior of housing 10 to be accessed without removing end cover 12. Man hole 34 is sized such that a workman can clean, adjust and/or repair parts, such as the coils or fan blades, within the housing 10, and is closed by a cover 35.

reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, and Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Search describes an electric machine having a housing with an end cover that includes a man hole for accessing the interior of the housing. Since there is no suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejections be withdrawn.

Moreover, if art “teaches away” from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited, as a whole, is not suggestive of the presently claimed invention. Moreover, Applicants respectfully submit that Permuy teaches away from Harms et al. and Search, and the present invention, and as such, there is no suggestion or motivation to combine Permuy with Harms et al. and Search. Specifically, Permuy describes a motor having a thermal screen having an outer circular frame or hoop portion and straight cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, and in contrast Harms et al. describe an endshield with external fins and a separate internal support with internal fins, and Search describes an electric machine having a housing with an end cover that includes a man hole for accessing the interior of the housing. Accordingly, Applicants respectfully submit that Permuy actually teaches away from Harms et al. and Search.

Further, and to the extent understood, none of Permuy, Harms et al., nor Search, considered alone or in combination, describes or suggests the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Permuy, Harms et al., nor Search, considered alone or in combination, describes or suggests the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Permuy and Harms et al. with Search, because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests combining the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "it would have been obvious to one of ordinary skill in the art to combine the reference of Permuy structure of the motor endshield and with the radiating fins of Harms et al. in order to dissipate more heat and with the structure of Search in order to have an easier access to the internal compartments of the motor" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such

Specifically, Claim 1 recites a motor endshield assembly that includes “an endshield comprising an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such that each of said recessed fins extends from said inner portion to said outer surface...a control assembly in contact with said inner surface and positioned directly beneath said recessed fins.”

None of Permuy, Harms et al., nor Search, considered alone or in combination, describes or suggests a motor endshield assembly that includes an endshield including an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface and a control assembly in contact with the inner surface and positioned directly beneath the recessed fins. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Search describes an electric machine having a housing with an end cover that includes a man hole for accessing the interior of the housing, wherein the man hole is sized such that a workman can clean, adjust or repair the parts within the housing. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Permuy in view of Harms et al. and Search.

Claim 11 depends from independent Claim 1. When the recitations of Claim 11 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 11 likewise is patentable over Permuy in view of Harms et al. and Search.

Claim 16 recites a motor endshield for an electronically commutated motor, the endshield includes “a shaft opening configured to receive a motor shaft...an internal surface comprising a substantially flat raised portion...an external surface comprising a raised cylindrical portion surrounding said opening and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such

that each of said recessed fins extends from said substantially flat raised portion to said external surface.”

None of Permuy, Harms et al., nor Search, considered alone or in combination, describes or suggests a motor endshield for an electronically commutated motor that includes an endshield including a shaft opening configured to receive a motor shaft, an internal surface including a substantially flat raised portion, and an external surface that includes a plurality of recessed fins extending radially outward from a shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from said substantially flat raised portion to said external surface. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, and Harms et al. describe an endshield with external fins and a separate internal support with internal fins, and Search describes an electric machine having a housing with an end cover that includes a man hole for accessing the interior of the housing, wherein the man hole is sized such that a workman can clean, adjust or repair the parts within the housing. Accordingly, Claim 16 is submitted to be patentable over Permuy in view of Harms et al. and Search.

Claim 18 depends from independent Claim 16. When the recitations of Claim 18 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claim 18 likewise is patentable over Permuy in view of Harms et al. and Search.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 11 and 18 be withdrawn.

The rejection of Claims 13, 14, 24, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Permuy and Harms et al. as applied to claims 3/1 and 24/21 above and in further view of Takagi et al. (U.S. Patent No. 6,081,056) is respectfully traversed.

Furthermore, Permuy and Harms et al. are described above. Takagi et al. describe a motor 1 including a casing 2, a stator 10, a rotor 14 and a control system 20 having a first circuit board 21 and a second circuit board 22 disposed to face each other. One of first and

second circuit boards 21 or 22 is configured to include an inverter control circuit, and the remaining first or second circuit board 21 or 22 is configured to include a power circuit. Six switching elements 24 are disposed on the leading end of circuit board 21 and a radiating sheet 29 is positioned between the top face (leading end face) of each switching element 24 and the casing 2 to transmit heat generated by control system 20. Coil spring 28 is disposed between first circuit board 21 and second circuit board 22 thereby pushing second circuit board 22 toward the base end a certain distance away from first circuit board 22 allowing a space for two electrolytic capacitors 23 which are disposed on the base end of first circuit board 21 between first circuit board 21 and second circuit board 22.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Permuy, Harms et al., nor Takagi et al., considered alone or in combination, describes or suggests the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Permuy and Harms et al. with Takagi et al., because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests combining the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "it would have been obvious to one of ordinary skill in the art to combine the reference of Permuy structure of the motor endshield and with the radiating fins of Harms et al. in order to dissipate more heat and the structure of Takagi et al. in order to have a stabilized circuit board" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Takagi et al. describe a motor including a first circuit board and a second circuit board disposed to face each other, wherein a radiating sheet is disposed between the top face (leading end face) of the first circuit board for thermal transfer. Since there is no suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejections be withdrawn.

Moreover, if art "teaches away" from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited, as a whole, is not suggestive of the presently claimed invention. Moreover, Applicants respectfully submit that Permuy teaches away from Harms et al. and Takagi et al., and the present invention, and as such, there is no suggestion or motivation to combine Permuy with Harms et al. and Takagi et al. Specifically, Permuy describes a motor having a thermal screen having an outer circular frame or hoop portion and

straight cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, and in contrast Harms et al. describe an endshield with external fins and a separate internal support with internal fins and Takagi et al. describes a motor including a first circuit board and a second circuit board positioned to face each other, wherein a radiating sheet is disposed between the top face (leading end face) of the first circuit board for thermal transfer. Accordingly, Applicants respectfully submit that Permuy actually teaches away from Harms et al. and Takagi et al.

Further, and to the extent understood, none of Permuy, Harms et al., nor Takagi et al., considered alone or in combination, describes or suggests the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claim 1 recites a motor endshield assembly that includes “an endshield comprising an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such that each of said recessed fins extends from said inner portion to said outer surface...a control assembly in contact with said inner surface and positioned directly beneath said recessed fins.”

None of Permuy, Harms et al., nor Takagi et al., considered alone or in combination, describes or suggests a motor endshield assembly that includes an endshield including an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface and a control assembly in contact with the inner surface and positioned directly beneath the recessed fins. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Tekagi et al. describe a motor including a first circuit board and a second circuit board disposed to face each other, wherein a radiating sheet is disposed between the top face (leading end face) of

the first circuit board for thermal transfer. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Permuy in view of Harms et al. and Takagi et al.

Claims 13 and 14 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 13 and 14 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 13 and 14 likewise are patentable over Permuy in view of Harms et al. and Takagi et al.

Claim 21 recites a method of assembling a motor endshield assembly for an electronically commutated motor, the motor endshield assembly including a control assembly, a power assembly, and an endshield with an inner surface having an inner portion, an outer surface, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface, said method comprising the steps of positioning the control assembly in contact with the inner surface of the endshield and directly beneath the recessed fins...connecting the power assembly to the control assembly.”

None of Permuy, Harms et al., nor Takagi et al., considered alone or in combination, describes or suggests a method of assembling a motor endshield assembly for an electronically commutated motor, wherein the motor endshield assembly includes a control assembly, a power assembly, and an endshield with an inner surface having an inner portion, an outer surface, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface, and wherein the method includes positioning the control assembly in contact with the inner surface of the endshield and directly beneath the recessed fins and connecting the power assembly to the control assembly. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Takagi et al. describe a motor

including a first circuit board and a second circuit board disposed to face each other, wherein a radiating sheet is disposed between the top face (leading end face) of the first circuit board for thermal transfer. For at least the reasons set forth above, Claim 21 is submitted to be patentable over Permuy in view of Harms et al. and Takagi et al.

Claims 24 and 25 depend, directly or indirectly, from independent Claim 21. When the recitations of Claims 24 and 25 are considered in combination with the recitations of Claims 21, Applicants submit that dependent Claims 24 and 25 likewise are patentable over Permuy in view of Harms et al. and Takagi et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 13, 14, 24, and 25 be withdrawn.

The rejection of Claims 4-9, 15, 19, 20, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Permuy and Harms et al. as applied to Claims 1, 3/1, 16 and 21 above, and further in view of Liberati (U.S. Patent No. 5,383,092) is respectfully traversed.

Permuy and Harms et al. are described above. Liberati describes an arrangement for connecting a plurality of transistors 46 to a heat sink 34 surrounding one end 22 of a control motor 10 for a mailing machine. The arrangement includes two sets of three transistors 46, and each set is mounted on the heat sink 34 by a single screw 50, washer 54, thermal transfer pad 160, insulator strip 164, and hold-down spring 170, rather than by separate screws, lock washers, flat washers, insulators and nuts for each of the six transistors 46.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Permuy, Harms et al., nor Liberati, considered alone or in combination, describes or suggests the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Permuy and Harms et al. with Liberati, because there is no motivation to combine the references

suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests combining the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "it would have been obvious to one of ordinary skill in the art to combine" the structure of the motor of Permuy with the structure of the motor having a thermal pad of Liberati "in order to provide good heat conductivity through the end shield" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levensgood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Liberati describes an arrangement for connecting a plurality of transistors to a heat sink wherein the transistors are mounted in sets on the heat sink by a single screw using a hold down spring, rather than by separate screws for each transistor. Since there is no

suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejections be withdrawn.

Moreover, if art “teaches away” from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited, as a whole, is not suggestive of the presently claimed invention. Moreover, Applicants respectfully submit that Permuy teaches away from Harms et al., Liberati, and the present invention, and as such, there is no suggestion or motivation to combine Permuy with Harms et al. and Search. Specifically, Permuy describes a motor having a thermal screen having an outer circular frame or hoop portion and straight cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, and in contrast Harms et al. describe an endshield with external fins and a separate internal support with internal fins and Liberati describes an arrangement for connecting a plurality of transistors to a heat sink wherein the transistors are mounted in sets on the heat sink by a single screw using a hold down spring, rather than by separate screws for each transistor. Accordingly, Applicants respectfully submit that Permuy actually teaches away from Harms et al. and Liberati.

Further, and to the extent understood, none of Permuy, Harms et al., nor Liberati, considered alone or in combination, describes or suggests the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claim 1 recites a motor endshield assembly that includes “an endshield comprising an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such that each of said recessed fins extends from said inner portion to said outer surface...a control assembly in contact with said inner surface and positioned directly beneath said recessed fins.”

None of Permuy, Harms et al., nor Liberati, considered alone or in combination, describe or suggest a motor endshield assembly that includes an endshield including an outer surface, an inner surface having an inner portion, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface and a control assembly in contact with the inner surface and positioned directly beneath the recessed fins. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Liberati describes an arrangement for connecting a plurality of transistors to a heat sink wherein the transistors are mounted in sets on the heat sink by a single screw using a hold down spring, rather than by separate screws for each transistor. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Permuy in view of Harms et al. and Liberati.

Claims 4-9 and 15 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 4-9 and 15 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 4-9 and 15 likewise are patentable over Permuy in view of Harms et al. and Liberati.

Claim 16 recites a motor endshield for an electronically commutated motor, the endshield includes “a shaft opening configured to receive a motor shaft...an internal surface comprising a substantially flat raised portion...an external surface comprising a raised cylindrical portion surrounding said opening and a plurality of recessed fins extending radially outward from said shaft opening towards an outer periphery of the endshield, such that each of said recessed fins extends from said substantially flat raised portion to said external surface.”

None of Permuy, Harms et al., nor Liberati, considered alone or in combination, describes or suggests a motor endshield for an electronically commutated motor that includes an endshield including a shaft opening configured to receive a motor shaft, an internal surface

including a substantially flat raised portion, and an external surface that includes a plurality of recessed fins extending radially outward from a shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from said substantially flat raised portion to said external surface. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor, Harms et al. describe an endshield with external fins and a separate internal support with internal fins, and Liberati describes an arrangement for connecting a plurality of transistors to a heat sink wherein the transistors are mounted in sets on the heat sink by a single screw using a hold down spring, rather than by separate screws for each transistor. For at least the reasons set forth above, Claim 16 is submitted to be patentable over Permuy in view of Harms et al. and Liberati.

Claims 19 and 20 depend, directly or indirectly, from independent Claim 16. When the recitations of Claims 19 and 20 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claims 19 and 20 likewise are patentable over Permuy in view of Harms et al. and Liberati.

Claim 21 recites a method of assembling a motor endshield assembly for an electronically commutated motor, the motor endshield assembly including a control assembly, a power assembly, and an endshield with an inner surface having an inner portion, an outer surface, a shaft opening extending therebetween, and a plurality of recessed fins extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface, said method comprising the steps of positioning the control assembly in contact with the inner surface of the endshield and directly beneath the recessed fins...connecting the power assembly to the control assembly.”

None of Permuy, Harms et al., nor Liberati, considered alone or in combination, describes or suggests a method of assembling a motor endshield assembly for an electronically commutated motor, wherein the motor endshield assembly includes a control assembly, a power assembly, and an endshield with an inner surface having an inner portion, an outer surface, a shaft opening extending therebetween, and a plurality of recessed fins

extending radially outward from the shaft opening towards an outer periphery of the endshield, such that each of the recessed fins extends from the inner portion to the outer surface, and wherein the method includes positioning the control assembly in contact with the inner surface of the endshield and directly beneath the recessed fins and connecting the power assembly to the control assembly. Rather, in contrast to the present invention, Permuy describes cooling fins which project away from the circular frame into the stream of air generated by a fan rotor and a control device mounted adjacent to an endplate, Harms et al. describe an endshield with external fins, a separate internal support with internal fins, and a control assembly positioned outside an endshield, and Liberati describes an arrangement for connecting a plurality of transistors to a heat sink wherein the transistors are mounted in sets on the heat sink by a single screw using a hold down spring, rather than by separate screws for each transistor. For at least the reasons set forth above, Claim 21 is submitted to be patentable over Permuy in view of Harms et al. and Liberati.

Claims 22 and 23 depend, directly or indirectly, from independent Claim 21. When the recitations of Claims 22 and 23 are considered in combination with the recitations of Claim 21, Applicants submit that dependent Claims 22 and 23 likewise are patentable over Permuy in view of Harms et al. and Liberati.

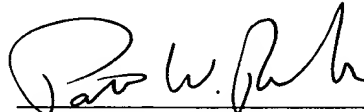
For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 4-9, 15, 19, 20, 22, and 23 be withdrawn.

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In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Patrick W. Rasche", written over a horizontal line.

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